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DYSSYNCHRONY AND THE RISK OF VENTRICULAR ARRHYTHMIAS IN THE MADIT-CRT TRIAL

ACC Poster Contributions
Ernest N. Morial Convention Center, Hall F
Tuesday, April 05, 2011, 9:30 a.m.-10:45 a.m.

Session Title: Defibrillation Threshold Testing and Predictors of Shocks in ICD Recipients
Abstract Category: 29. Defibrillation/Implantable Antiarrhythmia Devices
Session-Poster Board Number: 1163-383

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Background: The aim of this study was to investigate the association between the left ventricular (LV) dyssynchrony and the risk of ventricular tachycardia (VT) or ventricular fibrillation (VF) or death in patients enrolled in the Multicenter Automatic Defibrillator Implantation Trial - Cardiac Resynchronization Therapy.

Methods: Transverse dyssynchrony was measured at baseline and at 12 months by speckle-tracking echocardiography by assessing the standard deviation of time to peak strain from 12 myocardial regions. The primary end point was VT or VF or death, secondary endpoints included VT or VF, determined based on interrogation of ICDs.

Results: Transverse dyssynchrony was evaluated in 416 patients (57%) in the ICD group and in 661 patients (61%) in the CRT-D group. LV dyssynchrony at baseline before device implantation was not predictive for VT/VF. Decrease in LV dyssynchrony during 12-month follow-up was associated with a significantly lower risk of subsequent VT/VF or death compared to patients without decrease in LV dyssynchrony (Figure). Hazard ratio after adjustment for clinical covariates = 0.47, 95% CI: 0.27-0.81, p=0.007.

Conclusions: Baseline LV dyssynchrony does not reflect the risk of VT/VF in MADIT-CRT patients. Improvement in LV dyssynchrony after CRT-D implantation is associated with significantly reduced risk of VT/VF/Death and VT/VF in mild to moderate heart failure patients.